



GARY R. HERBERT  
Governor

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Lieutenant Governor

# State of Utah

## DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER  
Executive Director

### Division of Oil, Gas and Mining

JOHN R. BAZA  
Division Director

March 14, 2011

Kevin Butters  
Towers Sand and Gravel, LLC  
760 North Harrisville Road  
Harrisville, Utah 84404

Subject: Fourth Review of Notice of Intention to Commence Large Mining Operations, Towers Sand and Gravel, LLC., Towers Sand and Gravel Quarry, M/057/0006, Weber County, Utah

Dear Mr. Butters:

The Division of Oil, Gas and Mining has completed a review of your Notice of Intention to Commence Large Mining Operations (Notice) for the Towers Sand and Gravel Quarry, which was received January 5, 2011. The attached comments will need to be addressed before tentative approval may be granted.

The Division is concerned about this ongoing operation without an approved Notice or reclamation surety. We perceive a lack of significant progress toward finalizing the Notice, especially with the maps, although I am aware of your statement that you spent considerable time preparing this submittal.

One overriding comment in the attached review is that the plan needs to clearly identify the area and acreage that would be permitted **and bonded** for mining, and it needs to include appropriate maps and cross sections, calculations, material volumes, etc., for this area. Other areas and conceptual plans may be included, but the plan needs to make it clear that these areas are not permitted for mining until an amendment has been submitted and approved.

As soon as weather conditions and time constraints allow, the Division intends to use recent aerial photography, maps from your submittals, and a GPS unit to verify the amount of disturbance that should be included as part of the disturbed area. After completing this work, we anticipate scheduling a meeting with you to discuss this review.

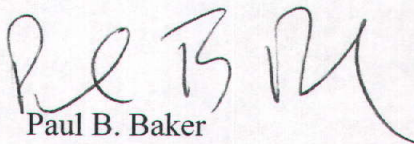
The comments are listed under the applicable Minerals Rule heading; please format your response in a similar fashion. Please address only those items requested in the attached technical review. You may send replacement pages with redline/strikeout text, or you may replace the entire submittal.



Page 2 of 12  
Kevin Butters  
M/057/0006  
March 14, 2011

Except as indicated above, the Division will suspend further review of the Notice of Intention until your response to this letter is received. If you have any questions in this regard please contact me at 801-538-5261 or Lynn Kunzler at 801-538-5310. Thank you for your cooperation in completing this permitting action.

Sincerely,



Paul B. Baker  
Minerals Program Manager

PBB:lk:eb  
Attachment: Review  
cc: JJ Allen, Pleasant View City  
P:\GROUPS\MINERALS\WP\M057-Weber\M0570006-TowersLMO\final\REV4-3917-02012011.doc

**FOURTH REVIEW OF NOTICE OF INTENTION  
TO COMMENCE LARGE MINING OPERATIONS**

**Towers Sand and Gravel, LLC  
Towers Sand and Gravel Quarry**

**M/057/0006**

**March 14, 2011**

**General Comments:**

Comment #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
1	Page 6	Since it appears that the portable concrete and asphalt plants referred to under 106.2 are not part of the current operation, the permit will need to be amended prior to bringing them onto the property, and the reclamation surety adjusted to cover the cost of removal.	lk	

**R647-4-105 - Maps, Drawings & Photographs**

**General Map Comments**

There are several comments regarding the maps that deal with accuracy of both the permit area and content of the maps (such as contours, disturbed area, reclaimed areas, etc. These comments are listed at the end of the review comment section. A site visit is warranted to ground truth the maps, and further comments may be forthcoming when the maps have been compared with the site conditions. This will not only provide a better quality base map, but provide a much greater level of accuracy. This will be scheduled in the near future as weather conditions allow.

Comment #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
2	All	Maps should have a bar scale so the scale can be determined if the map is reduced or enlarged.	whw	
3	Map D7 Existing and Proposed Overlays	The pre-mining and post-mining contours do not correlate to each other. The post-mining contour line 4790 lines terminates at the pre-mining contour line of 5080, which would mean that a 290 foot vertical highwall would be left after mining. The post-mining 4785 line swings near the 5080 pre-mining contour which would create a 295 foot highwall. The post-mining 4775 contour line terminates at a contour line that has post-mining elevation of 4800.	whw	
4		The contour maps should be at a scale of 1"=200' instead of 1"=418'.	whw	
5	Map D8	Existing Grades 3D needs to have a scale.	whw	
6	Map D2	Please show the property boundary location on the map	whw	

**105.1 - Topographic base map, boundaries, pre-act disturbance**

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
7	All maps	See general map comments at the end of this review.	lk	

**105.2 - Surface facilities map**

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
8	All maps	See general map comments at the end of this review.	lk	

**105.3 - Drawings or Cross Sections (slopes, roads, pads, etc.)**

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
9	Maps D5-7	The contour maps should be at a scale of 1"=200' instead of 1"=418'.	whw	
10	All Maps	See general map comments at the end of this review.	Lk	

**R647-4-106 - Operation Plan****106.2 - Type of operations conducted, mining method, processing etc.**

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
11	Page 6	Since it appears that the portable concrete and asphalt plants referred to under 106.2 are not part of the current operation, the permit will need to be amended prior to bringing them onto the property, and the reclamation surety adjusted to cover the cost of removal.	lk	
12	Page 6	Are the containment berms for the fuel storage tanks (item 5 under Operation Practices) designed to hold a minimum of 110% of the tank capacity? Please make this statement in the plan.	lk	

**106.3 - Estimated acreages disturbed, reclaimed, annually**

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
13	Page 6, 7	The statement in the plan that there will be "60 acres maximum disturbance at any time" needs to be verified. Judging by the permit area maps and aerial photos, it appears the areas identified as the active disturbed area may not include <b>all</b> of the current disturbed area. Page 7 identifies 44 acres of current disturbance plus up to 16 acres in some stage of reclamation (assuming from recently completed regrading to vegetation establishment near-ready for determination of successful reclamation; refer to comments #23 & 24 under R647-4-110.1).	lk	

**106.5 - Existing soil types, location, amount**

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
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Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
14	Page 7	<p>Please modify this portion of the plan so it applies to those areas that are being permitted, whether it be 60 acres or some other figure. How much additional soil can be salvaged from the area that is to be permitted? How much soil is needed to reclaim those areas that are being permitted? Please either omit reference to other acreage figures or include two sets of figures, one for the area to be permitted and another for conceptual areas.</p> <p>Why is only three inches being salvaged? The December 7, 2010, letter from GeoStrata says the topsoil is four to twelve inches thick, so a minimum of four inches should be saved. All efforts should be made to salvage as much soil as possible, up to a foot where it is available.</p>	lk	

#### **106.6 - Plan for protecting & re-depositing soils**

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
15	Page 8	<p>This section does not identify or reference the topsoil replacement plans. Section 106.5 indicates that 3 inches of soil will be replaced for reclamation. Why is only 3 inches being replaced when there is over 5 inches available based on current salvaged soil and the limited 3 inches planned for salvage over the 82 acres of future disturbance?</p>	lk	

#### **R647-4-109 - Impact Assessment**

##### **109.1 - Impacts to surface & groundwater systems**

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
16		<p>The following comment from the previous review was not addressed: Please state whether an agreement exists with the water rights owner, Jerry V. Larsen, in regards to the potential disruption of the Hunt's Rock Spring. Please provide an explanation of the parameters used for the hydrology calculations in Appendix G-6.</p>	tm	
17		<p>The current storm water pollution prevention plan (SWPPP) has expired. Please provide evidence that a SWPPP has since been approved and is current. The Division requests that the SWPPP be included in an appendix.</p>	tm	

##### **109.2 - Impacts to threatened & endangered wildlife/habitat**

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
18	Page 9	<p>The permit area is within high priority mule deer habitat. While it is agreed that much of this area has been previously impacted, deer still utilize the site and surrounding areas. Please identify the potential impact and efforts that will be made to mitigate those impacts.</p>	lk	

##### **109.3 - Impacts on existing soil and plant resources**

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action

Comm ent #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
19	Page 10	This section of the NOI needs to address the impacts to soils and vegetation. While it is understood that the original soils and vegetation may have been impacted by past practices (mining and agriculture), there are still soil and vegetation resources that will be impacted by this operation.	lk	

#### 109.4 - Slope stability, erosion control, air quality, safety

Comm ent #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
20		Please address post-mining slope stability. The cross sections show some reclaimed slopes being 1H to 1V slope. The slope should be stable if the material is rock. If the material is unconsolidated then a slope stability analysis must be done by a professional engineer.	whw	
21	Page 10	This section needs to reference Map I2 for the details on the berms and rock catchment.	lk	

#### R647-4-110 - Reclamation Plan

##### 110.1 - Current & post mining land use

Comm ent #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
22	Page 11	Wildlife habitat needs to be added to both the pre-mine and post mining land use. This section also refers to a final use of residential and refers to map H-2. This map shows the permit area zoned for parks and open space not residential area. Please make the appropriate correction.	lk	
23	Page 11	The NOI under this section includes a discussion labeled 'Rolling permit area or Flexible phasing'. This discussion does not provide insight on the current or post mining land use. It fits better with Section <u>106.3 - Estimated acreages disturbed, reclaimed, annually</u> .  Until final reclamation, including final regrading, topsoil replacement and revegetation, is completed, disturbed areas (acreage) will remain part of the permitted/bonded area. (No response needed to this comment.)	lk	
24	Page 11	Statements need to be clarified regarding how 'several areas may need to be mined and reclaimed multiple times to reach final grades'. Topsoil should not be used during these 'reclamation cycles'. Every time soil is salvaged and re-deposited, a small amount is lost. This creates un-acceptable impacts to the soil resource. Regarding the 60 acres of rolling disturbance, until areas have the final reclamation work completed and the vegetation has been determined to be successful, the area will remain part of the permitted and bonded area.	lk	

##### 110.2 - Roads, highwalls, slopes, drainages, pits, etc., reclaimed

Comm ent #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
25		Please show the location of all roads within the permit area boundary that will be retained for a postmining land use.	whw	

Comm ent #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
26	Drawing D13	Cross Section D13 says that the maximum slope will be no greater than 1H:1V, but the cross section shows a slope that is greater than 50 degrees. Please make the appropriate correction. A variance will be required if the slope is to be steeper than 45 degrees.	whw	

### 110.3 - Description of facilities to be left (post mining use)

Comm ent #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
27		This comment in the previous review was not addressed: Please provide a detailed description of the regional detention basin that will be left as part of the post mining land use. This description needs to include the dimensions, capacity, cross-sections of the embankments. inlet and outlet design,, etc. Water impounding structures can be left only if they are shown to have a sound hydrologic design and are needed to for, or will benefit the post mining land use. This demonstration needs to be provided.	tm	

### 110.4 - Description or treatment/disposition of deleterious or acid forming material

Comm ent #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
28	Page 12	Deleterious materials include fuels and lubricants, and, assuming the concrete and asphalt plants are constructed, may also include the waste, or excess materials used in association with these facilities. Please include these items in the list of deleterious or potentially deleterious materials.	lk	

### 110.5 - Revegetation planting program

Comm ent #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
29		The plan says topsoil will be placed on all slopes except on rock outcrops, and the highwall would be left at a 45-degree slope. The angle of repose slope for most soils is 35 degrees. Please show how topsoil will be applied to slopes steeper than 35 degrees.	whw	
30	Page 12	The soils lab did not analyze for all fertility parameters, therefore, a statement that there is no need for fertilizer is premature. Please include a commitment to analyze soils for all fertility parameters if revegetation is inadequate after three years.	lk	
31	Omitted	Please discuss timing of seeding operations. Seeding generally needs to be done in late fall (late October or November) for successful vegetation establishment.	lk	

### R647-4-113 – Surety

Comment #	Sheet/Page/ Map/Table #	Comments	Initials	Review Action
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Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
32	Rule R647-4-113-Surety	Please provide backup data. Specifically, please state: The volume of material that must be blasted to eliminate the highwall. Also include the unit costs for blasting. The rough grading cost must be supported with data that includes the area to be graded and the amount of material to be moved. The re-slope stockpiles and rip pit roads must be supported with the amount of material to be moved and the area to be ripped. The plan must include information about productivity for the shooter trucks that will be used to place topsoil.	whw	
33	Rule R647-4-113-Surety	Please define the worst case scenario. The worst case scenario is considered to be the most costly to reclaim. What makes the worst case The worst case scenario is defined by such items as maximum haul distances, maximum amount of material to be placed, and maximum highwall elimination. Please include a map that shows the status of the mine at the maximum extent of reclamation liability.	whw	
34	Rule R647-4-113-Surety	Please use the Division's forms for calculating the reclamation costs. They can be obtained from the Division's web site at <a href="http://linux1.ogm.utah.gov/WebStuff/wwwroot/minerals/bonding_worksheets.html">http://linux1.ogm.utah.gov/WebStuff/wwwroot/minerals/bonding_worksheets.html</a> .	whw	
35	Rule R647-4-113-Surety	Please provide a detailed list of structures and equipment on site that will need to be removed.	whw	
36		The costs to inspect, repair or replace the berm and fence at the top of the highwall need to be included in the surety.	whw	

#### **ADDITIONAL COMMENTS ABOUT MAPS AND APPENDICES:**

Listed below are general map comments that apply to several of the maps, not just the map identified with each comment.

##### **Map A1:**

The county line ends near the top and center of the map but needs to continue.  
Yellow is a very poor color to use - it is very difficult to read.  
Please label the various polygons inside the permit area.

##### **Map A2:**

Please label all features. What is the green area? What is the red/salmon area (assumed permit area).  
Why does this area not include all of what appears to be current disturbance?  
Google maps now show June 18, 2010 imagery. There have been significant changes since the 2006 imagery used for the maps.

##### **Map A3:**

Why is the current disturbed area not shown on this map? The aerial photo is several years more current than the aerial used in Map A2.

##### **Map B1:**

Areas of disturbance need to be connected.  
The current pit area does not include all of the apparent disturbance shown on previous aerial photos.

Map B2:

See previous comments. The 'area under revegetation' needs to be verified.

Temporary revegetation areas may need to be regraded to blend in with mine contours, so regrading costs for these areas need to remain with the surety.

How will the '60 total acre limit' be monitored and enforced?

Map C1:

Road areas that connect disturbance areas (such as clay area) need to be shown, and are considered part of the disturbed acreage.

The 'match line' is for lining up with what other map(s)?

Map C2:

Where is the permit area? Features should be outlined with dark colors so they can be easily identified.

The match line is for which other map? (It is assumed to be Map C1)

Map C3:

Please place title blocks, etc., so lines do not run through them.

What does the yellow line on the left side represent?

Map C4:

The current Google image (June 18, 2010) shows areas outside the areas marked on these maps with apparent disturbance/use outside the 'permit area' shown.

Appendix C5:

(3<sup>rd</sup> paragraph)—The state cannot consider salvage value in calculating the surety amount. In all likelihood, there is little or no value in remaining equipment if an operator abandons the site.

(5<sup>th</sup> paragraph)—The scenario described is best case. The worst case scenario is major regrading (including reduction of a highwall or backfilling), demolition/removal of structures and equipment, restoration of drainage and drainage controls, topsoil replacement and revegetation (which requires fertilizer and or amendments to establish vegetation).

Appendix D1:

(3<sup>rd</sup> paragraph)—As per drawings, the low point appears to be the south west corner, not the southeast corner. The steep slopes are along the north and eastern boundaries, not the south, east and northern boundaries.

(6<sup>th</sup> paragraph)—The rock catchment basins need to be shown on the map.

Map D2:

The scale needs to be exact.

Maps D6 & D7:

Finish grade contour lines end in mid map. What happens to the grade after the line ends? See also comments regarding scale from Map D5.

Map D9:

As per #8, Appendix D1, if the vertical and horizontal scales are the same, then the highwall is much steeper than a 1:1 slope. To have it this steep, you will need to have a professional licensed engineer certify long term stability and safety of these slopes. Also, this drawing depicts very blocky and unnatural

looking slopes. Please plan to round off sharp angles so that the finished highwall blends in better with the natural surroundings.

Cartesian maps may be more accurate, but it is impossible to make accurate measurements from them without the data points used to develop the map, especially when the 3-D images appear to be skewed.

Maps D10 – D16:

If Cartesian coordinate points were used for the maps and cross sections, why are the property boundaries hand drawn on the cross sections?

Please use standard labeling for X and Y axes. The X axes begins with 0 and are in 150 unit increments (assumed foot) – except Map D15 which is in 100 unit increments. The Y axis numbers end in 9's, 8's, 4's and 0's, and have different starting elevations as well as increments (yet the distance between appear to be the same—making the scale between the X and Y axes off the 1:1 as stated). This makes it somewhat confusing and difficult to compare with each other. Please use the same elevation starting point, increment and scale for all cross sections. It is suggested the starting elevation be 4700' so the final grade is not on top of the X axis line.

The highwalls on these cross sections are much steeper than the 1h:1v discussed in the plan. Please provide a certified engineer report that demonstrates long term stability of the slope.

Map E1:

This map needs to include a scale. This photo predates the clay removal near the northern border. What is the date of this photo? This map is titled 'Vegetation Aerial During Drought', yet there is no way to measure or otherwise quantify vegetation from this aerial photo. What is the relevance of this map to the mine plan?

Map F1:

What is the date of this aerial photo?

Photos F2-F6:

What does the 5\*5 and 10\*10 by the site numbers represent? From what direction were the photos taken? These photos were not taken looking straight down.

Appendix F7:

As stated in previous reviews, this vegetation study probably does not represent the pre-mining vegetation. Since you plan to use the vegetation data presented under R647-4-106.7, Appendix F7 should be removed from the plan.

Appendix F8:

Why were no topsoil samples taken from the current topsoil stockpiles? The soil sample for the first page of this appendix was taken from the location of vegetation photo point #1, not near the soil test pits shown on page 2 of Appendix F9. Why is no analysis reported for 'N'?

Appendix F9:

What happened to Plate 2 of this appendix (which is apparently the soil profile for TP-1)?

Map H2:

This map shows all of the current permit area as well as the proposed expansion as open space, not as residential. Zoning of the area would need to be changed before it could be considered residential. The Division cannot approve a land use that is not in conformance with local zoning ordinances.

**All Maps:**

Map labels should be standardized; they should be in approximately the same location from map to map, and they should not be placed such that they block or hide portions of the maps or photos. Line colors used to show particular features and areas need to be in contrasting colors so that they can be easily identified.